

Remarks

Reconsideration and further examination of this application is respectfully requested in view of the amendments and other actions referred to above and the remarks that follow.

Prior to entry of this amendment, claims 40-59 were pending. In this amendment, claims 40, 43, and 44 are canceled without prejudice, and claims 41-42 and 45-51 are being amended. The amendments to claim 45 and 48 are simply a re-writing of those claims in independent form. Those claims are therefore not being narrowed. The amendments to the other claims change their dependency from claim 40 to claim 45. No new matter has been added.

The Office Action rejected claims 40-44, 46-47, and 49-51 as obvious over Phillips (presumably, e.g., U.S. Patent 5,642,222) in view of the "Reflexite's Response to 3M Letter ...", which describes certain Super Bright (SB) tapes. (Note that the introduction of the rejection refers to the Plastic Digest reference as the secondary reference, but the substance of the rejection refers to Reflexite's Response to 3M Letter and not to the Plastic Digest reference.) This rejection is rendered moot by the cancellation of claims 40, 43, and 44, and by the change in dependency of the remaining rejected claims.

The Office Action rejected claims 45 and 52-59 as obvious over Phillips in view of the Reflexite's Response to 3M Letter, and further in view of McGrath (U.S. Patent 4,025,159). Applicants respectfully submit that this rejected cannot be sustained.

An essential component of an obviousness holding is a showing of a suggestion, teaching, or motivation to combine the references in a manner that falls within the scope of the rejected claims. See *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Such motivation must not originate from the Applicant's application. In the present case, however, it is only by hindsight, only with the benefit of Applicant's teachings in their application, that any such motivation can be found.

Phillips, the primary reference, is directed to elastomeric retroreflective structures. It is important to Phillips that these structures, and the retroreflective prism arrays they contain, be capable of being significantly stretched while not significantly diminishing the retroreflective properties of the structures. See e.g. col. 2 lines 18-41 of Phillips. Accordingly, Phillips teaches that the thickness of the non-extensible prism array in the valleys between the prisms is sufficiently thin so that the prism array can crack and split along the valleys when a minimal tensile force is

Application No.: 10/039103

Case No.: 48924US031

applied. Phillips further teaches that this allows the rigid prisms to remain in position with respect to the elastomeric film member (12) as the retroreflective structure is significantly stretched, so that the rigid prisms are not significantly distorted and the retroreflective properties of the structure are significantly maintained. See e.g. col. 4 lines 5-20 of Phillips. Phillips does discuss embodiments in which an adhesive and/or elastomeric film are provided on the back side of the prism array, and in each case *a reflective coating (26) or opaque reflective layer (54)* is provided on the facets of the prisms to maintain their ability to retroreflect. Significantly, even though seal films to maintain an air interface at cube corner facets were known, e.g. as exemplified by McGrath, Phillips conspicuously avoids mention of such films when discussing the problem of the loss of retroreflection when an adhesive is employed at the prism facets. See col. 4 lines 21-37. Furthermore, in each embodiment of Phillips in which a layer or film is provided on the facet side of the prism array, the drawings exemplify nothing other than uniform, continuous layers and films (see FIGS. 2A-2C and 3A-3C). This is completely consistent with Phillips' desire that the rigid prisms crack and split along the valleys therebetween and remain in position as the retroreflective structure is significantly stretched.

This is also why one of ordinary skill would have no motivation whatsoever to apply the seal film teaching of McGrath to the retroreflective structures of Phillips to yield "a seal film applied to the cube corner elements to maintain an air interface at the cube corner elements" (pending claim 45) or "a seal film applied to the retroreflective sheeting to maintain an air interface at the cube corner elements" (pending claim 52). The network of bonds associated with the seal film (see e.g. FIG. 1 of McGrath; see also FIGS. 6-8 of McGrath) would be expected to nonuniformly distribute any tensile force applied to the retroreflective structure, whereby any cracking and splitting along valleys, and the positioning of the prisms, would be much less predictable, raising into question whether the rigid prisms would be significantly distorted and/or whether the retroreflective properties of the structure would be maintained.

In summary, then, since the references do not provide the requisite motivation, teaching, or suggestion necessary to support a *prima facie* case of obviousness, the rejection of claims 45 and 52, and their dependent claims 41-42, 46-47, 49-51, and 53-59, should be withdrawn.

The Office Action objected to claim 48 as being dependent upon a rejected base claim, but indicated it would be allowable if rewritten in independent form. In response thereto, claim 48 has been amended to be rewritten in independent form and is submitted to be allowable.

Application No.: 10/039103Case No.: 48924US031Conclusion

In view of the foregoing, it is submitted that pending claims 41-42 and 45-59 are in condition for allowance, the early indication of which is earnestly solicited. Beyond the fee authorized above for the extension of time, and the fee authorized in the accompanying Request for Continued Examination (RCE), no additional fee is believed to be due; however, in the event any further fee is required, please charge such fee to Deposit Account No. 13-3723. One copy of this sheet marked duplicate is also enclosed.

Respectfully submitted,

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Date

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ATTACHMENT A:
Amended claims 41-42 and 45-51 (version with markings to show amendments being made)

41. (Amended) The sheeting of claim [40] 45, wherein the retroreflective sheeting does not exhibit a substantial loss of retroreflectivity when flexed.

42. (Amended) The sheeting of claim [40] 45, wherein the second layer includes a land layer, and the land layer is integral with the cube corner elements.

45. (Amended) [The sheeting of claim 44, further comprising:] A retroreflective sheeting, comprising:

- (a) a first layer comprising a first polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having a first and second major surface and allowing light that enters the first layer through either the first or the second major surface to pass through the first layer to exit the first layer through the other major surface; and
- (b) a second layer comprising a second polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface and having a surface opposite the third major surface in which cube corner elements are formed, wherein the cube corner elements are exposed to air; and
- (c) a seal film applied to the cube corner elements to maintain an air interface at the cube corner elements[.];
wherein the third major surface of the second layer attaches directly or through only a thin coating to the second major surface of the first layer.

46. (Amended) The sheeting of claim [40] 45, wherein the second layer attaches directly to the first layer.

47. (Amended) The sheeting of claim [40] 45, wherein the second layer attaches to the first layer through the thin coating, the thin coating promoting adhesion between the first and second layers.

Application No.: 10/039103

Case No.: 48924US031

48. (Amended) A retroreflective sheeting, comprising:

- (a) a first layer comprising a first polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having a first and second major surface and allowing light that enters the first layer through either the first or the second major surface to pass through the first layer to exit the first layer through the other major surface; and
- (b) a second layer comprising a second polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface and having a surface opposite the third major surface in which cube corner elements are formed;
wherein the third major surface of the second layer attaches directly or through only a thin coating to the second major surface of the first layer;
wherein the second layer attaches to the first layer through the thin coating, the thin coating promoting adhesion between the first and second layers; and
[The sheeting of claim 47,] wherein the thin coating is a primer.

49. (Amended) The sheeting of claim [40] 45, wherein the second polymeric material comprises poly(carbonate).

50. (Amended) The sheeting of claim [40] 45, wherein the second polymeric material comprises poly(methylmethacrylate).

51. (Amended) The sheeting of claim [40] 45, wherein the first layer is an outermost layer on a front side of the sheeting.

Application No.: 10/039103

Case No.: 48924US031

ATTACHMENT B:
All pending claims in clean format

41. (Amended) The sheeting of claim 45, wherein the retroreflective sheeting does not exhibit a substantial loss of retroreflectivity when flexed.

42. (Amended) The sheeting of claim 45, wherein the second layer includes a land layer, and the land layer is integral with the cube corner elements.

45. (Amended) A retroreflective sheeting, comprising:

- (a) a first layer comprising a first polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having a first and second major surface and allowing light that enters the first layer through either the first or the second major surface to pass through the first layer to exit the first layer through the other major surface; and
- (b) a second layer comprising a second polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface and having a surface opposite the third major surface in which cube corner elements are formed, wherein the cube corner elements are exposed to air; and
- (c) a seal film applied to the cube corner elements to maintain an air interface at the cube corner elements;

wherein the third major surface of the second layer attaches directly or through only a thin coating to the second major surface of the first layer.

46. (Amended) The sheeting of claim 45, wherein the second layer attaches directly to the first layer.

47. (Amended) The sheeting of claim 45, wherein the second layer attaches to the first layer through the thin coating, the thin coating promoting adhesion between the first and second layers.

48. (Amended) A retroreflective sheeting, comprising:

(a) a first layer comprising a first polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having a first and second major surface and allowing light that enters the first layer through either the first or the second major surface to pass through the first layer to exit the first layer through the other major surface; and

(b) a second layer comprising a second polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface and having a surface opposite the third major surface in which cube corner elements are formed;

wherein the third major surface of the second layer attaches directly or through only a thin coating to the second major surface of the first layer;
wherein the second layer attaches to the first layer through the thin coating, the thin coating promoting adhesion between the first and second layers; and
wherein the thin coating is a primer.

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49. (Amended) The sheeting of claim 45, wherein the second polymeric material comprises poly(carbonate).

50. (Amended) The sheeting of claim 45, wherein the second polymeric material comprises poly(methylmethacrylate).

51. (Amended) The sheeting of claim 45, wherein the first layer is an outermost layer on a front side of the sheeting.

52. A retroreflective article, comprising:

(a) a retroreflective sheeting having cube corner elements; and

(b) a seal film applied to the retroreflective sheeting to maintain an air interface at the cube corner elements;

wherein the retroreflective sheeting consists essentially of:

Application No.: 10/039,103

Case No.: 48924US031

- (c) a first layer composed of a first light transmissible polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having first and second major surfaces; and
- (d) a second layer composed of a second light transmissible polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface attached directly or through only a thin coating to the second major surface of the first layer, the second layer also having the cube corner elements formed on a surface opposite the third major surface.

53. The article of claim 52, wherein the retroreflective sheeting does not exhibit a substantial loss of retroreflectivity when flexed.

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54. The article of claim 52, wherein the second layer attaches directly to the first layer.

55. The article of claim 52, wherein the second layer attaches to the first layer through the thin coating, the thin coating promoting adhesion between the first layer and the second layer.

56. The article of claim 52, wherein the second layer consists essentially of the cube corner elements and an integral land layer, the land layer providing the third major surface of the second layer.

57. The article of claim 52, wherein the second polymeric material comprises poly(carbonate).

58. The article of claim 52, wherein the second polymeric material comprises poly(methylmethacrylate).

59. The article of claim 52, wherein the first layer is an outermost layer on a front side of the sheeting.